

REMARKS

Claims 1-33 were pending in this application. Claims 34 and 35 are added. Therefore, claims 1-35 are pending. Claims 1, 15, 23 and 29 are amended for clarity. New claim 34 is fully supported in the Specification at least by page 12, lines 11-13. New claim 35 is fully supported in the Specification by at least page 15, line 23 to page 16, line 2. Applicant respectfully requests reconsideration and allowance of all pending claims.

35 U.S.C. § 103 – Saether and Strong

Claims 1-5, 10-12, 14-19, 22, 29 and 31-33 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,405,219 to Saether et al. (hereinafter “Saether”) in view of U.S. Patent No. 5,689,688 to Strong et al. (hereinafter “Strong”). Applicants respectfully traverse.

Claim 1 as amended recites:

A method of synchronizing data among a plurality of web servers, wherein each of the plurality of web servers is coupled to a common data server, the method comprising:

receiving a scheduled activation time from the data server;
prior to the scheduled activation time, receiving updated data into staging caches in the plurality of web servers; and
at the scheduled activation time, causing the updated data from the staging caches within each of the plurality of web servers to be accessible from an active cache within each of the plurality of web servers.

Saether is cited in the December 31, 2003 Final Office Action as disclosing a method of synchronization among a plurality of web servers in a network wherein each of the plurality of web servers is coupled to a common data server. However, the Office Action acknowledges that Saether does not disclose

1 retrieving a schedule activation time. The Final Office Action then cites Strong as
2 disclosing the use and advantages of retrieving data into the staging cache and
3 copying data from the staging cache. data server. (See Office Action, page 2).
4 Strong fails to cure these deficiencies.

5 Strong describes a method for synchronizing local times, maintained at
6 nodes within a network architecture, with a reference time. (See Strong, Abstract).
7 Although the method described by Strong may be used to synchronize local times
8 at network nodes, this method does not *receive an activation time* at which time
9 updated data from a staging cache is made accessible in an active cache. Rather,
10 Strong discloses the use of reference time stamps (col. 6, lines 5-9). Applicants
11 respectfully assert that the time stamps of Strong are not equivalent to a scheduled
12 activation time as recited in Claim 1 and does not address the problems solved or
13 advantages realized by a method according to Claim 1. For example, a method
14 according to claim 1 can advantageously cause all of the web servers to update the
15 data at the same predetermined time (*i.e.*, at the scheduled activation time).

16 For at least these reasons, Applicant respectfully submits that Claim 1 is
17 allowable over Saether and Strong, alone or in combination. Given that Claims 2-
18 5, 10-12 and 14 depend from Claim 1, Claims 2-5, 10-12 and 14 are also allowable
19 for at least the same reasons.

20 Claim 15 recites in part:

21
22 wherein the web server is configured to **receive a scheduled**
23 **activation time** from the data server (emphasis added)

24 As discussed above, neither Saether nor Strong teaches or suggests
25 synchronizing data among multiple servers by receiving a **scheduled activation**

1 time. Thus, for at least this reason, Applicants respectfully submit that Claim 15
2 is allowable over Saether and Strong, alone or in combination. Given that Claims
3 16-19 and 22 depend from Claim 15, Claims 16-19 and 22 are also allowable for
4 at least the same reasons.

5 Claim 29 recites in part:

6
7 providing a **scheduled activation time** from the data server to each
8 of the plurality of web servers (emphasis added).

9 As discussed above, neither Saether nor Strong teaches or suggests
10 synchronizing data among multiple servers by receiving a **scheduled activation**
11 **time**. Thus, for at least this reason, Applicants respectfully submit that Claim 29
12 is allowable over Saether and Strong, alone or in combination. Given that Claims
13 31-33 depend from Claim 29, Claims 31-33 are also allowable for at least the
14 same reasons.

15
16 **35 U.S.C. § 103 – Saether, Strong and Hagersten**

17 Claims 6 and 30 stand rejected under 35 U.S.C. §103(a) as being
18 unpatentable over Saether in view of Strong and in further view of U.S. Patent No.
19 5,958,019 to Hagersten et. al (hereinafter "Hagersten").

20 Claims 6 and 30 recite:

21
22 6. A method as recited in claim 1 wherein retrieving updated
23 data into staging caches in the plurality of web servers is performed
24 asynchronously.
25

1 30. A method as recited in claim 29 wherein the communicating
2 updated data into a staging cache is performed asynchronously.

3
4 As discussed above, neither Saether nor Strong teaches or suggests
5 synchronizing data among multiple servers by receiving a **scheduled activation**
6 **time** as recited in independent Claims 1 and 29. The Final Office Action
7 acknowledges that Saether, in view of Strong, does not explicitly disclose
8 retrieving updated data into staging caches of web servers performed
9 asynchronously. The Final Office Action then cites Hagersten as teaching this
10 feature. Applicants respectfully assert that the cited Hagersten disclosure does not
11 overcome the deficiencies of Saether and Strong as described above.

12 Further, Applicants respectfully assert that Hagersten does not teach or
13 suggest suggest asynchronously retrieving or communicating updated data into
14 staging caches in servers. Rather, Hagersten teaches a multiprocessing system
15 configured to perform synchronization operations. Although Hagersten describes
16 various types of caches in a computer system, Hagersten fails to disclose or
17 suggest asynchronously retrieving or communicating updated data into staging
18 caches in servers, as recited in Claims 6 and 30. Therefore, the combination of
19 Saether, Strong and Hagersten fails to disclose or suggest all elements of Claims 6
20 and 30.

21 For at least these additional reasons, Applicant respectfully submits that
22 Claims 6 and 30 are allowable over Saether, Strong and Hagersten, alone or in
23 combination.

24
25 **35 U.S.C. § 103 – Saether, Strong and Yamazaki**

1 Claims 7 and 20 stand rejected under 35 U.S.C. §103(a) as being
2 unpatentable over Saether in view of Strong and in further view of U.S. Patent No.
3 5,923,855 to Yamazaki (hereinafter "Yamazaki").

4 Claims 7 and 20 recite:

5
6 7. A method as recited in claim 1 further comprising:
7 after the scheduled activation time, updating data caches in the data
8 server.

9 20. A system as recited in claim 15 wherein each of the plurality
10 of web servers is configured to update data caches in the data server after
11 the scheduled activation time.

12 As discussed above, Saether and Strong fail to teach or suggest
13 synchronizing data among multiple servers using a scheduled activation time. The
14 Office Action also acknowledges that Saether, in view of Strong, does not
15 explicitly disclose after the scheduled activation time, updating data caches in the
16 data server. (See Office Action, page 6). Yamazaki does not cure these
17 deficiencies.

18 Yamazaki discloses a multi-processing system and method for
19 synchronizing among processors with cache memory having reset state, invalid
20 state and valid state. Although Yamazaki describes updating data stored in cache
21 memories of different processors in a multi-processor system, Yamazaki fails to
22 disclose or suggest updating data caches after a scheduled activation time, as
23 recited in Claims 7 and 20. Therefore, the combination of Saether, Strong and
24 Yamazaki fails to disclose or suggest the elements of Claims 7 and 20. For at least
25 these additional reasons, Applicant respectfully submits that Claims 7 and 20 are
allowable over Saether, Strong, and Yamazaki, alone or in combination.

35 U.S.C. § 103 -- Saether, Strong and Sakon

Claims 8-9 and 21 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Saether in view of Strong and in further view of U.S. Patent No. 5,796,946 to Sakon (hereinafter "Sakon").

Claims 8-9 and 21 recite:

8. A method as recited in claim 1 further comprising:
after the scheduled activation time, calculating a next scheduled activation time.

9. A method as recited in claim 1 further comprising:
after the scheduled activation time, updating data caches in the data server and calculating a next scheduled activation time, wherein the updating and calculating are performed by the first web server to initiate a retrieval process after the scheduled activation time.

21. A system as recited in claim 15 wherein each of the plurality of web servers is configured to calculate a next scheduled activation time after the scheduled activation time.

As discussed above, neither Saether nor Strong discloses or suggests synchronizing data among multiple servers using a scheduled activation time. Thus, Saether and Strong fail to teach or suggest calculating such a time in a manner as recited in claims 8-9 and 21. The Office Action also acknowledges that Saether, in view of Strong, does not explicitly disclose calculating the next scheduled activation time. (See Office Action, page 7). Sakon does not remedy these deficiencies.

Sakon discloses multi-processor system barrier synchronizer. Although Sakon describes a next barrier value, such a value is used to synchronize

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1 processors in a multi-processor system, not for synchronizing data among multiple
2 servers. Thus, the next barrier value described by Sakon is not equivalent to the
3 next scheduled activation time as recited in Claims 8-9 and 21. Therefore, the
4 combination of Saether, Strong and Sakon fails to teach or suggest the limitations
5 of Claims 8-9 and 21.

6 For at least these additional reasons, Applicant respectfully submits that
7 Claims 8-9 and 21 are allowable over Saether, Strong and Sakon, alone or in
8 combination.

9
10 **35 U.S.C. § 103 – Saether, Strong and Brendel**

11 Claim 13 stands rejected under 35 U.S.C. §103(a) as being unpatentable
12 over Saether in view of Strong and in further view of U.S. Patent No. 5,774,660
13 to Brendel et al. (hereinafter "Brendel").

14 Claim 13 recites:

15
16 A method as recited in claim 1 wherein the plurality of web servers
17 comprise a web farm, and wherein the plurality of web servers are load
18 balanced using a domain name service (DNS) round-robin technique.

19 As discussed above, neither Saether nor Strong discloses or suggests a
20 method for synchronizing data among multiple servers using a scheduled
21 activation time, which is the subject matter recited in Claim 1.

22 Brendel discloses a world-wide web server with delayed resource-binding
23 for resource-based load balancing on a distributed resource multi-node network.
24 Although Brendel teaches the use of DNS, nothing in Brendel remedies the
25 deficiencies of Saether and Strong discussed above. Thus, the combination of

1 Saether, Strong and Brendel fails to teach or suggest the elements recited in Claim
2 13. For at least these reasons, Applicant respectfully submits that Claim 13 is
3 allowable over Saether, Strong and Brendel.

4
5 **35 U.S.C. § 103 – Saether, Strong, Yamazaki and Sakon**

6 Claims 23-28 stand rejected under 35 U.S.C. §103(a) as being unpatentable
7 over Saether in view of Strong in further view of Yamazaki in further view of
8 Sakon.

9 Claim 23 recites:

10
11 One or more computer-readable media having stored thereon a
12 computer program comprising the following steps:
13 retrieving a scheduled activation time from a data server;
14 prior to the scheduled activation time, retrieving updated data into a
15 staging cache in a server;
16 at the scheduled activation time, copying data from the staging cache
17 in the server to an active cache in the server; and
18 after the scheduled activation time, updating data caches in the data
19 server and calculating a next scheduled activation time.

20 As discussed above, nothing in Saether, Strong, Yamazaki, or Sakon
21 discloses or suggests synchronizing data among multiple servers using a scheduled
22 activation time, updating of data caches after a scheduled activation time, or
23 calculating a next scheduled activation time. Thus, the combination of these
24 references still fails to teach or suggest the subject matter of Claim 23. For at least
25 these reasons, Applicant respectfully submits that Claim 23 is allowable over
Saether, Strong, Yamazaki and Sakon, alone or in combination. Given that Claims
24-28 depend from Claim 23, Claims 24-28 are also allowable over Saether,
Strong, Yamazaki and Sakon for at least the same reasons.

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New Claims 34 and 35

New claim 34 recites in part, "receiving, by the plurality of web servers, a **scheduled activation time** from the data server" (emphasis added). This feature is similar to one discussed above in conjunction with the rejection of Claim 1. Therefore, Claim 34 is allowable over the cited references for at least the same reasons that Claim 1 is allowable.

New Claim 35 recites in part, "wherein the scheduled activation time is based on a **worst-case time** needed to copy data from the data server by a web server" (emphasis added). Applicants could find no teaching or suggestion in the cited portions of the cited references for this feature. Thus, dependent claim 35 is patentable over the cited references for at least this additional reason.

Conclusion

Claims 1-33 are now in condition for allowance. Applicant respectfully requests the issuance of the subject application. Should any matter in this case remain unresolved, the undersigned attorney respectfully requests a telephone conference with the Examiner to resolve any such outstanding matter.

Respectfully Submitted,

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